

Civil Defense

Medical Aspects from the Federal Standpoint

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THE FEDERAL Civil Defense Administration (FCDA) was established by Congress in December, 1950, under Public Law 920 of the 81st Congress. It is an agency of the Executive Branch of the Federal Government, reporting directly to the President. It was formed from a nucleus which had been working during the two preceding years in the National Security Resources Board (NSRB), consisting of the Health Resources Office and the Civil Defense Office.

Preceding the NSRB activities were two rather intensive studies done within the Department of Defense, resulting in the so-called Hopley Report, "Civil Defense for National Security."

All of these earlier studies indicated that, with modern weapons and modern means of delivery, Civil Defense was a vital necessity for this country.

So while the official organization (FCDA) is now more than four years old, organized activities have been going on for over six years.

The Civil Defense Act

Civil Defense is defined in Public Law 920 to mean all those activities and measures designed or undertaken (1) to minimize the effects upon the civilian population caused, or which would be caused, by an attack upon the United States, (2) to deal with the immediate emergency conditions which would be created by any such attack, and (3) to effectuate emergency repairs to, or the emergency restoration of, vital utilities and facilities destroyed or damaged by any such attack.

The law further defines Civil Defense so as to include, but not be limited to, (1) measures to be taken in preparation for anticipated attack, (2) measures to be taken during attack, and (3) measures to be taken following attack.

1. Pre-attack measures:

- (a) Establishment of appropriate organizations, operational plans, and supporting agreements.
- (b) Recruitment and training of personnel.
- (c) Conduct of research.

- (d) Procurement and stockpiling of necessary materials and supplies.
- (e) Provision of suitable warning systems.
- (f) Construction or preparation of shelters, shelter areas, and control centers.
- (g) When appropriate, the nonmilitary evacuation of civil population.
- (h) Education and training of the public in techniques of survival.

2. Measures to be taken during attack:

- (a) Emergency information and instructions to the public.
- (b) Enforcement of passive defense regulations prescribed by duly established military or civil authorities.
- (c) Evacuation of personnel to shelter areas.
- (d) Control of traffic and panic.
- (e) Control and use of lighting and civil communications.

3. Post-attack measures:

- (a) Fire-fighting and rescue.
- (b) Emergency medical, health, and sanitation services.
- (c) Monitoring for specific hazards of special weapons.
- (d) Unexploded bomb reconnaissance.
- (e) Essential debris clearance.
- (f) Emergency welfare services.
- (g) Immediately essential emergency repair or restoration of damaged vital facilities.
- (h) Restoration of public confidence and morale.

The word "immediately" should be noted in the Act, because it was clearly the intent of Congress that Civil Defense activities be confined strictly to the emergency period. What is further needed is a clear-cut definition of what would constitute the emergency period.

Civil Defense Responsibilities

In this era, when civilians as well as military forces are actively involved in war, constant readiness for defense of civilians against enemy attack is essential. Civil Defense in the United States must be an efficient organization which can be mobilized instantaneously to combat the effects of enemy at-

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tack on civilians. Moreover, it must be kept in a state of constant readiness so long as there is any threat of war in the foreseeable future. Finally, Civil Defense must be made a living function of civilian life, a matter of custom and habit, a matter of maximum activity, by utilizing existing patterns, existing agencies and existing means.

The basic operating responsibility for civil defense is in the individual and his local government. The individual, given all training possible, does what he can for himself in an emergency. The family unit, similarly trained, attacks its own problems while also contributing to the organized community effort. The community's civil defense organization works to meet its own crisis, receiving outside help if its facilities are inadequate, or contributing support to neighboring communities under organized state direction.

The preparation of the individual or the family for wartime attack on civilians, and their protection and preservation before and after enemy attack, is the prime objective of Civil Defense. Such individual and family protection is indispensable to the maintenance of civilian morale and determination to see a devastating war through to a victorious conclusion, and to the maintenance of civilian production of war materials, without which military efforts would quickly collapse.

The Congress—after studying various suggestions of placing Civil Defense in the Department of Defense, or as an independent agency, or spreading it throughout the government—decided that the primary operating responsibility would be in the states and their political subdivisions. The newly-constituted federal agency (FCDA) would coordinate the activities of the states and provide guidance and support—technical, financial and other.

The functions and duties of FCDA are: (1) To prepare national plans and programs for Civil Defense, and to advise the President, Congress, and the states of the status of Civil Defense; (2) to disseminate adequate civil defense information; (3) to provide courses and facilities for schooling and training; (4) to provide communications, warnings, and evacuation plans, (5) to develop civil defense measures, equipment, and facilities for the protection of the population; (6) to provide coordination of interstate programs and operations; (7) to advise the states on establishment of stockpiles of medical and other supplies; (8) to make financial contributions to the states for civil defense purposes; (9) to delegate certain responsibilities to other federal agencies and to coordinate their activities; (10) to coordinate civil defense activities with neighboring countries and allies; and (11) to stockpile equipment and supplies to be furnished the states and cities when needed.

Disaster Relief

In addition, FCDA, under executive order, has been directed to coordinate all federal activities in major disasters. Under Public Law 875 provision is made for the federal government to assist local and state governments in alleviating suffering and damage from major (natural) disasters, to repair essential public facilities and to foster necessary state and local organizations and plans.

Medical Program

Within the framework given above the Health Office of the Federal Civil Defense Administration has the responsibility in the medical and health areas of Civil Defense. These areas include:

1. Casualty Care
2. Medical Care of Noncasualties
3. Sanitation
4. Radiological Defense
5. Biological Warfare Defense
6. Chemical Warfare Defense
7. Mortuary Services
8. Medical Stockpiling

The FCDA Health Office exercises its responsibilities and functions under the Assistant Administrator for the Technical Advisory Services. In addition to the national office staff, there is a medical officer in each of the seven FCDA regional offices. His function is to work with the states and cities and the professional medical, health and allied groups within his region.

Planning Bases

Under current planning FCDA assumes that any or all of the 70 critical target areas could be attacked with nuclear and other methods of warfare. This assumption results in a total casualty estimate of 13.5 million living and dead immediately after attack. Of these, it is estimated that 8.2 million could survive the first day, constituting the extent of the total casualty treatment load. Eventual survivors would number about 5.5 million, making a casualty load of about 5 million over a three-week period.

These casualty estimates may be revised up or down as future developments warrant. Obviously, with sufficient warning time to effect evacuation the casualties would be reduced. On the other hand development of larger weapons with faster means of delivery might cause an upward revision of estimates.

Further, the effect of evacuation on the total medical load must be considered. While successful evacuation may reduce casualties, the public health and medical care problems of large numbers of dis-

placed persons, deprived of the usual protective community resources, will be greatly increased. However, the load upon the medical and health resources will probably be just as great.

1. *Casualty Care.* This continues to be the gravest problem in Civil Defense because of its magnitude. In all the United States wars from the Revolutionary through World War II there was a total of 1,160,552 casualties that survived wounds. Civil Defense is currently planning to take care of 5,000,000 surviving casualties, produced within a short space of time—actually hundreds of thousands within a matter of seconds. Immediate casualty services would have to be provided locally, in great part by nonprofessional personnel under extremely adverse conditions. Initial supplies and equipment must come from local and close-by sources until state and federal aid can arrive. Obviously, effective casualty services will require the best advance planning, organizing and training. It is equally apparent that there will not be enough physicians and nurses and other professional and technical personnel to provide anything more than the most dilute emergency life-saving care. The principle of “doing the best for the most” will have to apply. Professional manpower and man-hours will have to be conserved for the important function of the use of professional judgment in determining which lives can be saved with available facilities. We will not be able to afford the waste of time and valuable supplies on casualties who cannot be saved except by time-consuming procedures. Ordinary peace-time handling of the injured cannot be practiced at a time like this. A good example would be a perforating wound of the abdomen. Good surgical technique ordinarily saves a large majority of persons with such wounds. But time and personnel will not be available to open the abdomen and spend several hours in exploration and repair. Expectant and delayed treatment in such cases is the only answer.

We are beginning to instill this philosophy in our medical schools. One of our big problems is to get training for mass casualty care down to the local physician. FCDA is exploring the possibility of putting a series of short lectures on sound film or film strips with platters. Content of the film would be similar to that given at the Walter Reed Army Medical Center Course entitled “Management of Mass Casualties.” Such a series would contain guidelines for the classification (sorting) of casualties as well as the management.

2. *Medical Care of Noncasualties.* In addition to the care of those injured by enemy attack, we must plan to provide emergency medical care for all of the remaining population who will need medical attention. With great numbers of people on the

move the average day-to-day morbidity will no doubt be increased. Every able-bodied person will be working to the point of physical and mental exhaustion. Food, rest, and transportation will be in short supply.

With evacuation of large numbers of the population will come the additional hazard of increased incidence of the communicable diseases. The chronic disease groups will be deprived of their usual attention in homes and outpatient dispensaries. Babies will continue to be born—probably more and earlier, if previous war-time experience is any indication. Abortions and miscarriages will increase. Injuries from accidents, traffic and other kinds, will be many. If the weather is unfavorable morbidity will be increased by exposure.

3. *Sanitation.* This program is directly connected with the control of the communicable diseases referred to above. Cities depend for their existence on a supply of safe water and food, on effective removal of liquid and solid wastes, and on shelter provided with plumbing, electricity, gas and heat. Disruption of utilities and the destruction of shelter could lead to extensive public health problems. If a city is evacuated, the population, normally accustomed to high sanitation standards, will be susceptible to a wide variety of communicable diseases when exposed to the primitive living conditions which must be expected in disaster situations. The threat of major epidemics in the evacuated and support area populations will be great. The chief specific problems will be:

(a) Delivery of uncontaminated drinking water to meet minimum subsistence standards.

(b) Disposal of excreta and liquid wastes to prevent enteric infections.

(c) Provision for emergency pasteurization or boiling of milk.

(d) Emergency housing sanitation to control the spread of respiratory infection and other communicable diseases.

(e) Insect and rodent control in areas where specific human diseases may be endemic in the insect and wild rodent populations.

(f) Food protection, including storage and handling, waste disposal, and other sanitation measures at mass care, hospital and emergency feeding centers.

(g) Decontamination of personnel and inanimate objects.

(h) Protection of shelter air intakes from the introduction of contaminants resulting from special weapons attack or from radioactivity.

(i) Determination of the safety of surface sources of water supply and uncovered parts of distribution systems, such as reservoirs.

(j) Determination of the safety of stored foods and foodstuffs.

(k) Provision for adequate potable water and safe food, and for emergency handling of wastes, in shelters.

The number of trained or experienced sanitation personnel on the peacetime staffs of local and state health departments will be inadequate. Support plans should provide for the interchange of technical personnel. Volunteer or part-time workers should be recruited and trained in advance. Many commercial establishments in the food-preparation and service industries have personnel with sanitation experience. Pest control, septic tank cleaning, building and maintenance firms also have personnel useful for sanitation, as well as equipment and supplies.

4. *Radiological Defense.* With the release of the Strauss fall-out announcement to the public, radiological defense assumed a new importance. The radiation hazard is nothing new nor are we without defense against it. The possibility of increased hazards from radiological contamination emphasizes the following points:

(a) The need for more detailed weather data. The Weather Bureau is ready and willing to cooperate closely at all levels of operation.

(b) The need for considering radiological contamination as an additional factor in plans for evacuation.

(c) The desirability of providing cover or shelter, since almost any kind of cover or shelter can reduce the danger appreciably. An ordinary frame house outside the area of blast and fire, for example, will afford some protection. A basement shelter will provide even more. A simple underground shelter with three feet of earth cover will give virtually complete protection from lethal radiation.

(d) The need for additional development in monitoring methods, including aerial and fixed station procedures.

(e) Implementation of training programs to keep step with the increasing number of survey instruments being procured.

FCDA continues to get out informational material on fall-out and shelter. A stepped-up training program is being developed in cooperation with the Department of Health, Education, and Welfare. The 1956 appropriation to FCDA includes funds for research in monitoring methods, decontamination, shelter, and medical management of radiation injuries. Also included are some \$4,000,000 for procurement of survey instruments and dosimeters for the federal stockpile. Instruments will continue to be available to the states and cities for training purposes.

5. *Biological Warfare Defense.* The program for defense against biological warfare is divided into defense of man, defense of animals, and defense of crops. Adequate basis for the defense of man is found in the private medical practice and health departments of all the states. However, auxiliary health personnel is needed to supplement the peacetime communicable disease services within the community. For example, the need for water, milk and food sampling in times of threatened use of biological warfare will tax the community far beyond its peacetime requirements. Auxiliary personnel must be available to assume this additional load. This appears to be a logical spot for science students and teachers to fit into the civil defense picture in their community. On the national level, FCDA has delegated the responsibility for planning, research, and development of biological warfare defense and communicable disease control to the Department of Health, Education, and Welfare and the Department of Agriculture. Conferences at a technical level are in progress with the Public Health Service to formulate a working agreement delineating respective spheres of activity and responsibility in biological warfare defense and communicable disease control. Similar negotiations have been undertaken with the Food and Drug Administration of Department of Health, Education, and Welfare to coordinate their activities with FCDA.

The following research and training projects relating to communicable disease control and biological warfare defense, have been initiated by the Public Health Service:

(a) Immunization investigations on basic questions leading to improvement of vaccines and other immunizing procedures.

(b) Detection, prevention and control of airborne diseases.

(c) Laboratory techniques for rapid identification of biological warfare agents.

(d) Water supply protection.

(e) Milk and food protection.

FCDA stockpiling of biologicals and chemotherapeutic agents now is based in part on the requirements for a biological warfare defense and communicable disease control. A joint FCDA-PHS Technical Committee to advise in this area has been established.

The APHA Manual "Control of Communicable Disease" has just been reissued. Twelve thousand copies with an FCDA cover for distribution to state and local civil defense and health agencies have been ordered.

FCDA film strips and a filmograph on various aspects of the defense against biological warfare are almost complete. These are nontechnical and di-

rected at lay groups. Exhibits on biological warfare and sound films on animal diseases have been cooperatively developed and acquired by FCDA and the Department of Agriculture.

6. *Chemical Warfare Defense.* Certain fields of responsibility in chemical warfare have been delegated to the Department of Health, Education, and Welfare. We feel that the whole Civil Defense Chemical Warfare program is included in detection and identification, individual protection, medical care, training, and industrial hazards.

The Army Chemical Corps is developing, for the Navy, a kit for the detection of nerve gases and vesicants which promises to be suitable for civil defense purposes.

The protective mask for civil defense workers has been standardized and is now available.

The Civilian Protective Mask (E-52), developed by the Chemical Corps for FCDA, should give sufficient protection against all agents, including protection against inhalation or ingestion of fall-out particles, to permit evacuation or transportation to shelters. It has passed engineering tests and we plan to procure 5,000 in five sizes (1,000 of each size) for field testing on approximately 1,000 civilian families. It is anticipated that field testing of this mask will begin soon, and the mask should be ready for procurement at a cost of \$2.00 to \$2.50 each. The question of their distribution is under study.

A protector for infants and children up to 6 years of age is also under development.

Atropine self-injection units for treatment of nerve gas casualties are still being procured under the federal stockpiling program. They will also eventually be supplied with all types of protective masks.

Training in this area presents the same problems as in other fields. Plans are being developed by the Public Health Service to implement training programs for the states.

It is planned that the American Chemical Society be asked to assist in a study of the chemical plants in target areas which might become a hazard by release of toxic chemicals. This study would be coordinated with the Industry Office of FCDA. When the problem is better understood, the Public Health Service will be asked to recommend the necessary precautionary measures.

7. *Mortuary Services.* While mortuary service is recognized as an essential, priority has been accorded other programs in the past. However, FCDA

has developed a manual on mortuary services which is scheduled for issuance shortly. This manual will contain detailed recommendations for the collection, identification, and disposal of the large number of dead to be expected under enemy attack.

8. *Medical Stockpile.* From the federal standpoint more progress has been made in this program than any other. FCDA now has stored under 24-hour guard in some twenty warehouses scattered throughout the nation enough medical and surgical supplies and equipment to care for 2,500,000 casualties for a period of three weeks. With the funds provided in the 1956 fiscal year this amount will be increased to enough for 3,500,000 casualties for three weeks. This program is well in balance in all categories except for the 200-bed improvised hospitals. We have been able to order only 930 of the 6,000 improvised hospitals it is estimated would be needed. The states have procured about 68 of these units.

Our stockpile requirements must, of course, be revised as future developments warrant. At present, FCDA is working toward the goal of requirements for 5,000,000 surviving casualties for three weeks. By the end of fiscal year 1956 (June 30) we will have reached 70 per cent of this goal.

Although some states continue to procure items for medical stockpile, the amount has significantly decreased in the past year. Until authority and funds are provided the federal government, our stockpiles must still be considered as replenishment supplies for the states and the cities; initial requirements must come from state and city sources until federal supplies can arrive.

There is a noticeable trend towards the federal government's assuming more financial responsibility and more direct authority in the nation's civil defense efforts. However this turns out, though, it should be borne in mind that, if attack comes, it is the worker who is on the scene who must do the job. No federal agency has the manpower to perform so enormous a task. It must be a sharing of responsibility and duties. The federal government should do everything possible to assist the states and cities in preparing for something it is hoped will never happen. Yet every sound-thinking person recognizes that we must be prepared. Upon the shoulders of the medical profession will fall the most gigantic task ever created. Sound planning can make it easier.

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